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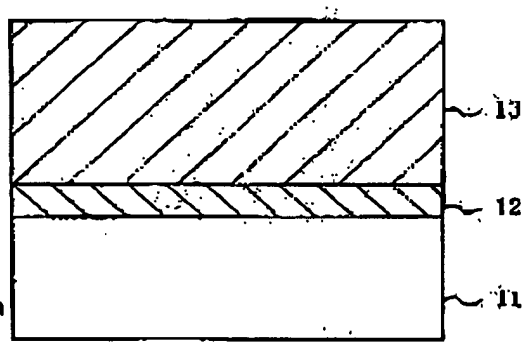
(71)Applicant : MATSUSHITA ELECTRIC IND CO LTD
(72)Inventor : SHINAGAWA SHUICHI
KAMEI HIDENORI
TAKEISHI HIDEMI

(54) P-TYPE NITRIDE SEMICONDUCTOR AND PRODUCING METHOD THEREOF

(57)Abstract:
PROBLEM TO BE SOLVED: To obtain a high quality p-type nitride semiconductor without requiring any annealing after growth.
SOLUTION: After the substrate temperature is raised to about 1,050° C, nitrogen gas and hydrogen gas are introduced as carrier gas at a flow rate of about 13 L/min and 3 L/min, respectively, for about 60 min onto a substrate 11 along with ammonia gas at a flow rate of about 4 L/min, TMG at a flow rate of about 80 μmol/min and Cp2Mg at a flow rate of about 0.2 μmol/min thus growing on a buffer layer 12 a p-type nitride semiconductor layer 13 of Mg doped GaN by 2 μm thick. Subsequently, the substrate temperature is lowered from the growth temperature of 1,050° C to the vicinity of 600° C in 5 min thus obtaining a p-type nitride semiconductor having hole carrier density of 1.2×1017 cm-3.



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